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ABSTRACT

Presented are proceedings from the 1975 conference on research needs related to the development of personnel to serve the handicapped (sponsored by the Bureau of Education for the Handicapped). Conference papers and remarks are provided for four areas of research needs: pupil outcomes in education for the handicapped (a paper by R.E. Shores), personnel selection (a paper by J.J. Eisenbach), personnel training (remarks by H. McKenzie), and personnel utilization (a paper by L. Burrello). Among the top priority research needs identified by conference participants are development of procedures for determining educational expectations and objectives, systems for observing teacher-pupil interaction and teacher behaviors, and study of alternative systems for inservice training. (CL)

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PROCEEDINGS OF THE CONFERENCE ON RESEARCH NEEDS RELATED TO THE DEVELOPMENT OF PERSONNEL TO SERVE THE HANDICAPPED

March 7-9, 1975

Bureau of Education
for the Handicapped
U.S. Office of Education

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FOREWORD

by

Edwin Martin
Chief
Bureau of Education
for the Handicapped

FOREWORD

The U.S. Office of Education is committed to assuring equal educational opportunities for all handicapped children. Efforts of the Office of Education in meeting this commitment are coordinated through the Bureau of Education for the Handicapped. Education of handicapped children has been adopted by the U.S. Office of Education as one of its major priorities. Among the objectives designed to implement this priority are: 1) to assure that every handicapped child is receiving an appropriately designed education; 2) to assure that every handicapped child who leaves school has had career educational training that is relevant to the job market, meaningful to his career aspirations, and realistic to his fullest potential; 3) to assure that all handicapped children served in the schools have a trained teacher or other resource person competent in the skills required to aid a child in reaching his full potential; 4) to secure the enrollment of preschool-aged handicapped children in federal, state, and local educational and day-care programs; and 5) to encourage additional educational programming for severely handicapped children to enable them to become as independent as possible, thereby reducing their requirements for institutional care and providing opportunities for self-development.

Research and development activities of the Bureau are directed toward providing information and developing products which can be directly related to the accomplishment of these objectives. Current planning activities, of which these conferences are a significant part, will permit us to specify better the barriers to meeting these objectives. Further, we will be able to define, and hopefully prioritize, key issues where research and development activities can significantly contribute to the overall mission of the Bureau.

PREFACE

by

Max Mueller
Chief
Research Projects Branch
Bureau of Education
for the Handicapped

PREFACE

The Research Projects Branch of the Bureau of Education for the Handicapped (BEH) is implementing a comprehensive planning effort designed to determine how research activities can best contribute to the accomplishment of Bureau objectives. The broad purposes of this planning effort are to identify significant barriers to accomplishment of these objectives, to delineate key substantive issues related to these objectives, to identify promising strategies for removing these barriers, and to address these issues through research and related activities. Initial goals are to develop long-range research plans related to Bureau objectives and to identify specific research tasks which merit immediate attention in terms of support for research and related purposes.

Our primary concern in initiating this planning effort is that the resulting plan, and especially the identification of specific tasks to be accomplished in the immediate future, truly reflect the best current thinking of the broadest possible sampling of the field of special education and related disciplines. We fully realize that our efforts must result in a program which is responsive both to the constraints imposed by our responsibilities as managers of public funds and to the needs of handicapped children as perceived by the consumers of research.

Procedures for award of grants and contracts increasingly demand that decisions regarding support for research and related purposes be made by federal program managers. If we are to implement this emerging responsibility effectively, it is critical that we increase our communication with our constituency. We can only maintain the credibility of the research program by systematically seeking input from the professional community.

The need for more definitive planning is reinforced by the severe limitations of available funds for research and related purposes. The number of problems associated with education of the handicapped unquestionably exceeds by several orders of magnitude the number that could be attacked feasibly under present funding levels. Thus, it is imperative that we not only identify issues which are relevant but also identify those issues and problems which are most critical at this point in time.

It is especially important now that we involve the field fully in the process of developing research plans and priorities. We are hopeful that the strategies outlined will assure an optimal level of credibility, relevance, responsiveness, and effectiveness in the research program. The initial objectives to be accomplished are:

1. To develop a systematic organizational schema for addressing each of the Bureau objectives
2. To identify significant content (issues, problems, needs, and so on) associated with each objective
3. To prioritize content both within and across objectives
4. To identify research strategies related to those areas where research approaches are appropriate

Research Planning Strategies

Strategies have been developed on the basis of several assumptions which, like the resulting plans, are subject to modification based on input from the field. Our basic assumptions are:

1. That practitioners are a primary source for identifying critical needs related to improvement of educational opportunities for the handicapped
2. That research expertise is essential to defining problems to be solved

through research; and deciding what research or research-related strategies may appropriately be brought to bear on the solution of problems of education for the handicapped

3. That, through the interaction of practitioners and researchers, it is possible to optimize the ultimate impact of research support
4. That we will be effective in our efforts to communicate to our constituency: (a) the overall planning schema, (b) the results of each of the procedures for obtaining target group input, and (c) the overall support pattern emanating from the planning schema

Given the foregoing rationale, objectives, and assumptions, a number of strategies will be employed to establish professional relevance and credibility. At least six forms of input appear to have promise for assuring adequate communication with relevant constituencies:

1. Research Needs Task Forces
2. Position Papers
3. Needs Assessments
4. Research Integration Projects
5. Expert Reviews
6. Research Needs Conferences

Research needs task forces: Throughout the planning process, task force groups will be constituted to assist Bureau staff in accomplishing the research planning task. The composition of any given task force would depend on the specific effort being addressed, but overall, a broad range of people would be involved: federal and nonfederal personnel, researchers and consumers of research findings, special educators and personnel from multiple disciplines, and so on.

Position papers: The Research Projects Branch solicits suggestions from the

field in several ways. We welcome position papers from individuals and/or organizations relating to any of the Bureau's objectives. This strategy should provide considerable input in terms of the identification of significant needs, content, and appropriate research strategies. As the research planning effort proceeds, we anticipate that certain issues may surface which will call for specifically invited position papers focusing on such special issues. Though it is doubtful that every idea submitted can be directly incorporated in the plans or individual requests for proposals, all position papers, whether specifically invited or not, will be carefully considered as these plans develop.

Needs assessments: The Research Projects Branch will identify major issues through comprehensive, national cross-sectional surveys of those involved in the education of handicapped children. Such surveys will identify content areas, and analyses of responses will also contribute to establishing priorities.

Research integration projects: In some areas of education of the handicapped, the most immediate need related to research planning is to synthesize and critically review existing information. A very large body of research on education of the handicapped has been created over the last quarter century. This body of research has not been evaluated comprehensively with respect to technical quality, utility, and potential for codification and wider diffusion. Integration and evaluation of this literature and experience are required to aid in the planning and definition of research programs concerned with improvement of educational opportunities for the handicapped and to provide a basis for potential use by local, state, and federal education agencies.

Tightly objective accounts of the present state of knowledge should be highly valuable to researchers developing plans for future thrusts and to BEH/OE,

which could then develop specific program announcements or requests for proposals for work designed to fill identified gaps or to answer specific, critical questions.

Expert reviews: The primary purpose of expert review will be to provide consensual validation of content areas and priorities. Throughout the research-planning process, therefore, resulting documentation will be subjected to extensive expert review. Such reviews will be tailored to a great extent to the nature of any given document. However, several general considerations are immediately apparent. Whatever the content of a given document, both individual and institutional expertise will be employed to assist our staff in refining and evaluating the documentation. Certain organizations (such as the Council for Exceptional Children or the National Association of State Directors of Special Education) will be invited to participate. Some documents may require review by experts from related disciplines, by consumers, and by others.

Research needs conferences: Interaction between research and consumer constituencies will be encouraged by support of topical national forums for establishing major issues. Conferences such as this one should contribute to all of the planning tasks. Such activities are particularly important in identifying those problems in the education of the handicapped which can be addressed most effectively through research and related activities. Particular reasons for conferences of this type are: (1) to examine what has been investigated and what needs investigation in each area, (2) to describe better the role of BEH in organizing its resources for more effective research and demonstration efforts, and (3) to investigate ways of disseminating and interpreting research information so that it can be applied by practitioners.

How BEH Views Research and the Handicapped

The research program of the Bureau of Education for the Handicapped has as its

mission the improvement of educational programs for handicapped children through the stimulation and support of applied research and related activities. Support is directed at providing the information and resources necessary to increase the availability of appropriate educational opportunities for every handicapped child.

In order to stimulate more effective programming for handicapped children, the Bureau is structuring its research and development program to link research and research-related activities more directly to the support of special education services. Activities supported under the research program must be applied in nature and must show promise of producing valid and relevant information. Whether an activity is applied is determined on the basis of the extent to which such activity:

1. Is a direct effort to solve some critical education problem; and
2. Is planned so that the final product of such activity can be reasonably expected to have a direct influence on the performance of handicapped children or on personnel responsible for the education of the handicapped.

In terms of research support through the BEH, the handicapped are defined as those persons requiring special educational adjustment associated with mental retardation, serious emotional disturbance, visual impairment, hearing impairment, speech disorders, crippling and other health impairments, and learning disabilities.

A necessary underpinning of all the Bureau objectives is to assure that all handicapped children served in the schools have a trained teacher or other resource person competent in the skills required to aid the child in reaching his full potential.

Since direct support of training activities is the primary objective of

the Personnel Preparation Program, related activities supported under the research, innovation, and development program will concentrate on providing information and resources for implementation in training programs. From this point of view, key considerations relating to personnel development go beyond research on the training of special education teachers. We are interested in the many ancillary personnel who also provide special services to the handicapped. We are interested in the organization of personnel services. We are interested in the potential of largely untried personnel (such as regular teachers, parents, and others) to contribute to the education of the handicapped. And we are interested in the interaction of personnel with other elements of the educational system.

The Bureau has been spending about $10 million a year on support of research and related activities, and we hope to be able to at least maintain, if not increase, this support over the coming years. Our principal purpose in holding this conference was to obtain input from a broad range of special educators and related specialists to assist the Bureau's program planning. This fits into our larger objective of improving planning to make the most effective and efficient use possible of the limited federal research investment. We hope that the information generated by this conference may have a very broad impact on research programming related to the development of personnel to serve the handicapped; we guarantee that your deliberations will influence the way the Bureau allocates its research resources.

INTRODUCTION

INTRODUCTION

Primary among the concerns of the Research Projects Branch of the Bureau of Education for the Handicapped (BEH) is the question of priorities: Of all the research needs that might be identified about the education of the handicapped, which are the most crucial to pursue over the next five years? In seeking a response to that question, the Bureau has involved special and vocational education practitioners, occupational and physical therapists, counselors, researchers, and others in the field in developing research priorities for the 1970s.

The Bureau carried out this dialogue with its colleagues in the field by holding four two-day workshop conferences, each of which involved from 66 to 91 persons representing various levels of concern for, and knowledge of, the handicapped, and each planned by a steering committee of 6 to 15 members. Each conference focused on finding the priorities and research needs of one aspect of education for the handicapped. The four topics considered were: 1) career education for the handicapped; 2) education of the severely handicapped; 3) early childhood education of the handicapped; and 4) development of personnel to serve the handicapped.

Background of the Conference

The success of the Conference on Personnel to Serve the Handicapped depended as much on careful planning as it did on active and creative participation. A crucial first step was the selection of the Steering Committee. On August 7, 1974, staff members of BEH and Educational Testing Service (ETS) met in Washington, D.C. and selected 15 persons--BEH staff members who were most knowledgeable about the

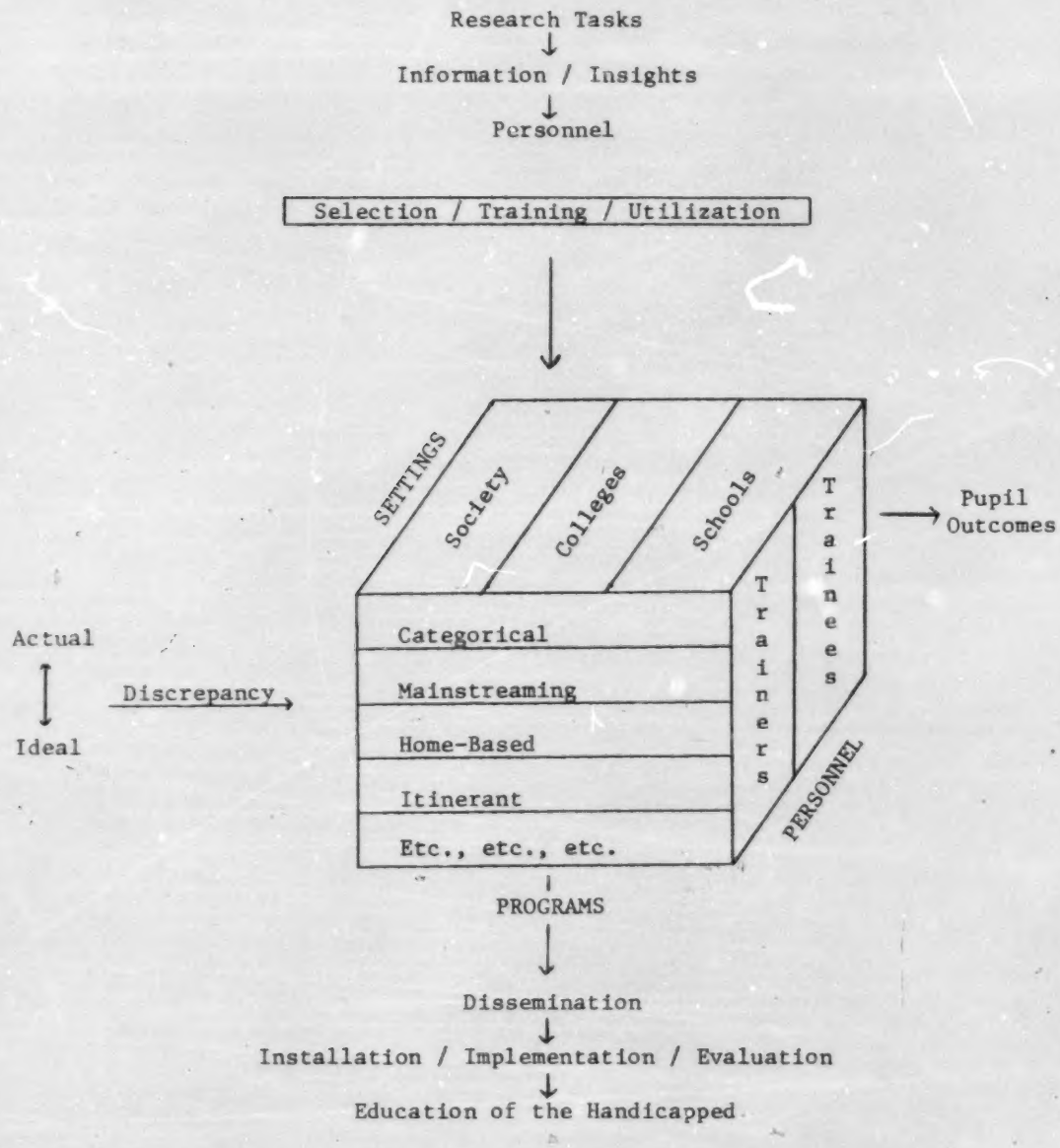
field, the most concerned and knowledgeable individuals from related federal agencies and regional offices, and others throughout the country most expert in and aware of research and programming in all aspects of the development of personnel to serve the handicapped.

The members of the Steering Committee (the names of the members are listed in Appendix A) met in Washington, D.C. for a two-day conference from August 28 to 30. During those two days, the members laid the foundation of the conference. From their knowledge of, and experience in, the field, they decided on the topics, or tasks, to be addressed by the participants and then worked out the focus session/work session structure to accommodate them. To provide a conceptual framework for the participants, the members of the Steering Committee devised a three-dimensional model (Figure 1) which suggests visually both the complexity of the field and a systematic process to consider the interactive aspects of preparing personnel to serve the handicapped. They also decided on the dates on which such a conference could be given to gain maximum attendance. They drew on their knowledge of the people in their field to identify possible conference leaders who, in turn, would be helpful in suggesting possible participants. The committee members were helped in the task of nominating participants by chief state school officers, state directors of special education, and officers of professional organizations and associations throughout the nation who sent in suggestions by mail.

In November, the members of the Steering Committee officially nominated those whom they felt would be the best participants for the conference. They also reviewed and approved their earlier suggestions about the content, dates, and structure of the conference. The names of those nominated by the Steering Committee were then reviewed and approved by the BEH Project Officer and those people, together with others nominated by the Bureau, were issued invitations to the conference.

Figure 1

Conceptual Model
for Identifying Research Needs Related to Training
Personnel for the Education of the Handicapped



The Conference

The Conference on Research Needs Related to the Development of Personnel to Serve the Handicapped was held at the Henry Chauncey Conference Center at ETS in Princeton, New Jersey from March 7 to 9, 1975. The 66 participants included teachers and administrators of special and vocational education, occupational and physical therapists, counselors, researchers, and others involved in the education of the handicapped.

The two-day session was a workshop conference that focused upon the identification of research needs in four major areas: pupil outcomes; personnel selection; personnel training; and personnel utilization.

The conference was structured in a modular fashion with participants addressing each area, or task, in both large- and small-group work sessions. For each task, all participants met first for a focus session during which one or several speakers provided a stimulus for the work sessions that followed by exploring various aspects of the subject. In the focus session on pupil outcomes, for example, the speaker called for research to determine what pupil behaviors should be developed that will help the handicapped person be considered a productive member of society.

After each focus session, the participants formed themselves into 7 teams of 8 or 9 members each to identify and explore researchable ideas in each task area. This was accomplished in two steps: first, by getting down on paper all the research ideas each team could think of within a reasonable time limit and second, making selections from those ideas, refining them, writing rationales, and suggesting possible research approaches and outlining the potential uses of such research.

The conference participants began with their first focus session late Friday afternoon and concluded their initial brainstorming sessions late Friday

night. Beginning at nine o'clock on Saturday morning, they continued alternating focus sessions with team sessions until they had covered all four tasks late Saturday night.

On Sunday, the final day of the conference, the members of each team reviewed all the research ideas that had been generated by themselves and all the other teams since Friday night. From all those ideas, each team was asked to select the four most important (one from each task area) and from those, the top-priority research need.

A summary of the research needs recommended for study by the conference participants--the top-priority needs announced on Sunday and the runners-up from which they were derived--are listed and discussed in "Recommendations" beginning on page 49.

Task 1:

Identification of Research Needs
Related to Pupil Outcomes in
Education for the Handicapped

Focus on Pupil Behavior

An Interactive Model for Identifying Research Needs in Personnel Preparation

by

Richard E. Shores

George Peabody College for Teachers

Most of us are guided by principles or a doctrine of living. These principles tend to guide our thinking about our individual functioning in our private, as well as our professional, lives. I have a basic belief in the Judeo-Christian ethic that individuals should live in ways which are productive, altruistic, and creative. We may be accepted in society if we are not creative or extremely altruistic, but never if we are not productive.

Individuals who are not viewed as being productive by the society in which they live are considered deviant. If these individuals are young and fortunate enough to live in an area served by a special education program, they may be referred and often placed in special eduation or other programs serving the handicapped.

For the last hundred years or more, psychologists and educators have attempted to discover why these people are deviant. Researchers have investigated the deviant individual as he functioned in isolated environments, such as institutions and special education classrooms. Their research has indicated that these individuals were, in fact, deviant and, further, were very low producers. They tended to lack certain skills which those in their environment expected, they were socially isolated, they did not perceive the world "correctly," and in some cases, were even too active.

The explanation of why these individuals were deviant focused the practitioners' attention on the deviancy within the individual. For those in special education, this has resulted in many of the approaches in special education designed to

remediate, or in some cases bypass, the person's deviancy or handicap. These remediation tactics have not been demonstrated to be highly successful, primarily because of the concept of the deviancy models on which they are based. It is proposed here that the focus of future research should be on the individuals as interactive with their environment, as well as on treatment strategies which will facilitate the development of productive, altruistic, and creative persons to at least a level of social acceptance within their individual ecological systems. Not on the concept that deviancy lies within the individual but on the concept that deviancy is a product of the environment interacting with the individual. As special educators, if we accept the interactive-individual hypothesis, the focus of research, then, will move, at least partially, away from the within-the-child deviancy model to focus on the child interacting with his environment. Those of us preparing personnel then must focus on the interactive effects of our training on the individuals who are the ultimate consumers, the pupils in special education programs.

Three Distinct Areas of Research

We have three distinct areas of research on personnel preparation which we should consider:

1. Teacher Training Activities
2. Teacher Activities
3. Pupil Performance

In the past, we have concentrated our efforts in research and evaluation by isolating the specifics within the individual boxes. The teacher-training activities were considered isolated entities within college training. Course work and field work were often unrelated activities. Likewise, diagnostic and programming skills were taught as unrelated responses. One set of procedures was used in presenting materials and another for interaction with the children. Within the pupil performance area, academic responses were considered different from social-emotional

interaction and again operated under one theory of teaching reading and another for developing cooperation. I believe all of those factors involved in the training activities should be interactive with the teacher performance which then should be reflected in pupil performance, with the pupils' performance being the foundation for all the activities.

Recently, probably due to BEH's influence, interaction approaches have begun at least between the trainers' activities and the teachers' performance. More evaluation of the effects of the individual training programs on teacher performance in the field has begun. Questionnaires have been sent to graduates asking such questions as "How have the programs helped you as a teacher?" and "What in the training program could be improved?" Teacher trainers have begun to reject the notion that "good teachers are born" and have begun to think that certain teacher behaviors are important and need to be taught in the training programs. Competency-based teacher training is now in its infancy.

Feedback from the graduates to the training program is beginning to have an impact in bringing about changes in the training programs. Some of these changes involve interaction within the trainer-performance area revolving around such questions as "How does course content relate to field work?", "What kind of course work and field work are needed?", "What competencies have been developed which have aided the trainee in teaching?" (See for example, Weisham, 1972; Wood, 1970).

Although evaluation of the teacher-trainer products has begun to produce changes in college training, we are only at the level of interaction between teachers in the field and the trainers of teachers. And only at a verbal level. We must take this evaluation directly to the pupils at their performance levels with the primary question being: Does the training program have an effect on the behavior of pupils served by the graduates? Only with this information can we actually develop competency-based training programs.

Research Needs

One of my former professors, Ogden R. Lindsley, stated that there are at least four steps in developing teacher programs. I think these steps are equally appropriate aids in identifying research needs.

1. We need to define responses.
2. We need to develop teaching strategies to train those responses.
3. We need to evaluate the results of training.
4. If successful, we need to replicate and if unsuccessful, try again.

Three and four (evaluation and replication) involve data systems and research designs. Although they are extremely important, I am not going to spend time discussing them. Let us then consider: (1) defining the responses (What are the responses we are trying to develop?) and (2) research needs related to the teaching strategies (How can we teach?). So often it seems to me that we know more about how than we do about what.

Let me give you an example. Contingent teacher attention (praise) has been shown over and over again to have demonstrated effects on various child behaviors including language development, reading, math, developing cooperative play of social isolates from the very young to adults and across a wide range of developmental levels. This is such a well-documented teaching tactic that after reviewing the literature on teaching competencies, Shores, Cegelka, and Nelson (1973) stated that it is probably the only empirically demonstrated teaching competency that can be found in the literature. But when it comes to an individual child in his particular ecological system, what do we praise? Teacher praise has been used for many years to develop cooperation among young children. But what is cooperation? How do we define cooperation? What is cooperative play? What are the functions of cooperative play? Recent research (Patterson and Reid, 1971; Strain and Timm, 1974; Strain and Shores, 1974) indicated that we should redefine cooperation as a reciprocal interaction and that the teacher's attention (or reinforcement control)

should be on developing responses through contingent teacher attention that can serve as both stimuli and reinforcers for other children (Cooke and Apolloni, in press; Strain and Shores, 1974). That "what to teach" in developing cooperation has changed from a gross definition of "cooperative playing together" to a more precise definition of reciprocal interaction based on research designed to investigate what to teach.

Let me carry this question of what to teach a bit further. It seems to me that we must consider within this question another question: What will aid this person in being productive within both his immediate as well as his long-term environment? In special education today, mainstreaming is a hot concept. If many of our youngsters are to be mainstreamed, if reintegration is the goal, then we need to know what skills our youngsters need to function in that environment (the mainstream). Is learning to walk a balance beam or drawing lines between dots actually going to facilitate his integration, or is it more important that he learn to read and write and be accomplished at simple arithmetic? We need to know more about the environments to which the individual is going. Only with this information can we plan strategies for teaching. We must know more about what to teach the pupils in special education. With greater understanding of what to teach, we can greatly improve on teacher performance through our training activities.

How to Teach

How to teach involves the teacher performance with the pupil's behavior. However, the information gained from research in this area becomes the what to teach for the teacher-trainer.

As I stated earlier, we probably know more about how to teach than what. Given that we can define "what," research has developed very effective teaching tactics. For example, what we have learned about precision teaching and applied behavior-analysis approaches has been used to teach basic academic skills to children who, in the past, had been labeled "trainable retarded" because we thought them

incapable of learning these skills (e.g., Brown and his colleagues at the University of Wisconsin and Haring's Program in Seattle). There are, however, many questions still in need of research within this teacher-performance area. For example, some researchers believe that teaching a new skill (which we may call acquisition) requires different tactics from those used in developing the pupils' production of this skill to a sufficient level to be considered successful (or what has been termed proficiency).

Has it been demonstrated that diagnostic processes have an effect on the pupil? Or more directly, has it been demonstrated that diagnosis leads to programming which has predictable effects on pupils? It seems to me that we have a proliferation of diagnostic instruments with the large majority having only face validity or concurrent validity, which really means that these instruments have been related to other instruments of similar validity. With very few exceptions, these procedures have not actually demonstrated that programming for pupil performance is enhanced by these processes. For the most part, these diagnostic instruments have only a classification function and have not been proven to be diagnostic.

The exceptions--that is, the procedures for diagnosis that actually interact with pupil performance by aiding the teacher in programming--are most often of a criterion-referent nature. That is, they are specifically designed to aid the teacher in specific programming. For the most part, these procedures are confined to very specific functions and often are designed either by the developer of specific academic materials or by individual teachers. These procedures seem to be highly effective in aiding the teachers in successful programming. But <u>research is needed</u> to aid in analyzing and developing procedures for further analyzing and developing these "informal assessment" procedures so that all teachers may benefit from these tactics.

Given that diagnosis interacts with choosing materials for programming or actually designing programs, does that program planning effect <u>how</u> teachers present

the instructional activities? This question would include asking such questions as: If task analysis and/or concept analysis is used by teachers, do they attend to factors other than task analysis or do they include what is known about discrimination training? What are the factors of teaching behaviors that are crucial in teaching a concept or a task, given a "good" program? Are we committed to devoting money, effort, and time to develop computer-operated programs that are essentially error-free and need little teacher involvement? I really believe that based on both the technology available in computer science and what we already know about learning, it would be possible to develop errorless learning programs in most of the basic skills (Sidman and Stoddard, 1966).

The teacher's interaction with pupils in presenting materials and/or programs also reflects program planning, which leads to another question: Do diagnosis and programming affect the way the teacher interacts with the pupils?

There have been many studies of teacher-child interactions. Unfortunately, none has demonstrated anything consistently. As has been indicated (Shores et al, 1973), the major problem with these studies was that the procedures were of a correlational nature and did not demonstrate influential effects. The studies with designs that investigated influential teacher interactions demonstrated (as noted earlier) that contingent teacher attention has a high probability of influencing pupil behavior.

I believe that there are still many research questions that involve only this form of interaction, the teacher's contingent attention. For example: How may a teacher become a reinforcer? If we define reinforcer in the way that many of us view it, as reflected in the empirical law of effect, then contingent attention must increase the probability that the response will recur or that under contingent attention, the pupil's responses will increase in rate. Research on tactics which will increase the power of teacher attention then may allow us to train teachers who can develop much greater rapport with their students. This can only be

accomplished if the research on teacher effectiveness is directly related to pupil performance. The major point I want to make is that an enormous amount of research is necessary to identify those behaviors of teachers which have demonstrable effects on pupil performance.

Trainer's Performance

Research on teacher training incorporates both teachers' performance and pupils' performance. It seems to me that in order to train teachers we must know that what we are training them to do has an effect on the pupils. Therefore, interaction among teachers and teacher-trainers must occur and not only at a verbal level (follow-up studies of graduates), but must include the effect on the pupils being served. There are few studies that I know which have demonstrated that the training activities actually had an effect on the pupils of the teachers trained. The Prevention Intervention Project in Nashville headed by Bob and Mary Lynn Cantrel has a training program component that uses applied behavior analysis in regular elementary classrooms. The results of this training program have produced changes in teacher responses (as measured by direct observation procedures). The nature of this change was an increasing praise-to-criticism ratio $\left(\frac{\text{praise statements}}{\text{praise statements + critical statements}}\right)$. In addition, it was indicated that those who increased the ratio 80 percent or above had target students who had significantly greater academic achievement than a control group. Moreover, they were able to predict this change in praise/criticism on the basis of a criterion test.

A study by Stowitschek and Hofmeister (1974) developed a minicourse for in-service training. Specifically, the minicourse was designed to instruct teachers how to teach simple math skills. The target teacher's student gains significantly more on a math test than a control group simply on the basis of meeting criteria in the minicourse.

There are other training programs which also use the change in students as a primary demonstration of their training program's effectiveness (such as McKenzie

at Vermont and Haring and Fargo at Seattle). However, research is still needed to clarify the effects the training activities have on teacher performance as reflected in the pupil performance.

Summary

This paper has emphasized the need for research on personnel preparation to focus on the effects of the training program activities and developing teacher performance which will increase the performance level of handicapped persons. The suggestions for research include:

1) Identifying what pupil behaviors should be developed that will increase the probability that the handicapped person will be considered productive by those in his environment
2) Identifying how to aid in developing those critical responses through research on teaching processes and teacher-pupil interaction
3) Research on developing teacher-training activities that are directly reflected in producing increases in pupil performance

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Task 2:

Identification of Research Needs
Related to Personnel Selection in
Education for the Handicapped

Personnel Selection in Special Education

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Introduction

The stated goal of this conference is to answer a question: During the next five years, what research tasks are most likely to yield high priority information and insights to narrow the gap between the ideal and the actual in selecting, training, and utilizing personnel in schools, colleges, and other societal settings to improve the education of the handicapped?

To achieve this goal, we must identify and examine long-standing criteria used in selecting personnel for teaching, research, supervision, and administration. At the very outset, we should be reminded that few of the currently used criteria have been subjected to impartial scrutiny. If our objective is to identify research tasks that will eventually enhance the education of the handicapped, we cannot afford to have certain criteria which are above study and consideration.

Today, we find that nearly all of our colleagues stress the importance of matching the racial backgrounds of teachers and students. Moreover, we insist that special-class teachers complete an extensive array of special education courses before they qualify for an endorsement to serve the handicapped. Without adequate evidence, we in the colleges and universities maintain that professors involved in training teachers of the mentally retarded must themselves have taught the retarded. With even less evidence to substantiate our positions, we insist that a prospective candidate must have had at least two years of teaching experience before accepting a college teaching position. Likewise, only those with earned doctorates can qualify for university faculty appointments. Meanwhile, letters of recommendation are revered by employers, and high scholastic attainment in collegiate courses is considered the hallmark of professional excellence.

Frequently, one hears a school administrator express the notion that teachers of the handicapped should have several years of experience teaching normal youngsters before being assigned to a position in special education. In some states, one must have earned a teaching credential and have had two or three years of teaching experience in special education in order to qualify for the position of director or chief administrator of programs and services for the handicapped. Length of hair, religious convictions, personal appearance, emotional stability, sex, and marital status all serve as additional factors in the selection process.

The Matching Process

If the ultimate validity of the selection process rests on how efficient it is in forecasting an individual's professional performance, it is imperative that employers engage in a matching process. This process involves both the prospective employee and the employer in a detailed delineation of knowledges, skills, and attitudes thought to be critically and basically essential for task mastery.

To implement this process, however, mutually accepted professional competencies and expectations should be identified and listed for each position. What the person is expected to do under specified conditions is of paramount importance. Consequently, public school personnel and individuals representing professional preparation programs must reach an agreement on a list of basic professional knowledges and skills practitioners should be able to demonstrate. Otherwise, it is virtually impossible to ascertain whether an individual is incompetent or was selected for the wrong position.

Because the future success of a special educator will, in most instances, be determined by local school district, residential institution, or social agency personnel, professional training programs should include basic competencies identified by these prospective employers. While only a few schools, institutions, and agencies have identified and listed such competencies in behavioral terms, increased efforts to elicit these statements should be undertaken by college and university leadership personnel. In the meantime, individuals involved in the implementation of training

programs should also attempt to analyze major and minor thrusts of their professional sequences and identify specific behavioral objectives they desire to have students accomplish. By combining competencies identified by both groups and articulating these in comprehensive professional training programs, communication between employers and prospective employees can be enhanced, and perhaps the matching process will be achieved.

Future Trends and Recommendations

Consumers of programs and services have increased their surveillance of professionals and program outcomes with the expectation that accountability will be achieved. These programs and services have become more visible to the public than ever before in our history. Moreover, greater visibility and accountability will undoubtedly be demanded of future professionals. If these demands are denied, consumers can, and probably will, resort to litigation. Gone are the days when those responsible for offering public benefits could deny input and evaluation to those being served. Recent events have shown that stonewalling is no longer a viable alternative.

Since some special education training programs are three or four years in duration, analyses should project needs over at least a five-year period. This will enable colleges and universities to adjust student admissions and become more sensitive to local, state, and regional employment requirements.

Presently, local school districts and similar constituencies are strongly committed to in-service training, which is appropriately designed to meet local personnel needs. While these units may view field-based in-service training as a preferred training alternative, college and university personnel should remain sensitive to their concerns and attempt to respond to requests for service whenever possible. Moreover, leadership personnel responsible for administering preparatory programs should be cognizant of the changing role expectations of their faculty. Consequently, new

members of the faculty should be interested in and sufficiently competent to offer in-service as well as preservice training in a variety of settings.

The demand for competent special education personnel will probably persist until all of the states have achieved full service programs for the handicapped. Barring unforeseen legislative enactments, financial disasters, or military interventions, programs and services for the handicapped will continue to expand. However, as more and more candidates for these positions are prepared by colleges and universities in the United States, intensive competition for employment opportunities should be anticipated. Consequently, an annual analysis of personnel needs should be conducted in each state and data derived from these investigations should be disseminated to appropriate institutions and agencies.

As soon as sufficient resources for the handicapped are implemented, the demand for specialized personnel will be substantially reduced. Employment opportunities resulting from retirements, resignations, illnesses, and deaths will most likely compel employers to increase the number of temporary, nontenured and part-time personnel. This action will ensure continued flexibility in terms of staffing programs and services and enable each unit to respond to changing human needs. Consequently, colleges and universities engaged in the preparation of special education personnel should initiate efforts to determine how changing local, state, and regional employment opportunities will eventually influence existing and planned programs, staffing patterns, and relationships with schools, institutions, and agencies.

Training institutions should be able to monitor changes in employment opportunities by analyzing placement patterns in their local, state, and regional areas. These patterns can usually be discerned by evaluating data provided by the institution's placement bureau or office and by analyzing reports disseminated by the state department of education. By utilizing this information, an institution should be in the position to identify high- and low-density employment potentials for each level and type of

professional person being prepared. Should the institution wish to develop and expand its placement potentiality, promotional efforts may then be directed toward those employers who for various reasons may not have elected to hire individuals prepared by this institution.

Summary

In summary, the selection of personnel for special education has been based on criteria that are suspect and in all probability only remotely related to forecasting an individual's performance in a given position. To ensure success in this procedure, it has been recommended that training personnel and employers strive to identify professional competencies required for each position and to select only those individuals able to demonstrate competence in each of the designated areas. Additionally, it has been recommended that all educators of the handicapped and higher education personnel be acutely aware of the increasing demand for professional accountability. If accountability is to be achieved, educators should be especially sensitive to the changing needs of the handicapped.

As local school districts, residential institutions, and social agencies achieve full service programs and services for the nation's handicapped, competition for employment will become more intense. Therefore, it was recommended that each state conduct an annual analysis of personnel needs with the express hope that training institutions will be able to adjust their admissions and change their programs accordingly. Finally, in order to monitor placement potentiality, it was suggested that institutions engaged in preparing special education personnel should assess current placement patterns and determine areas of high and low placement potentiality for each level and type of individual being prepared.

Task 3:

Identification of Research Needs
Related to Personnel Training in
Education for the Handicapped

Remarks by

Hugh S. McKenzie

Department of Special Education

University of Vermont

I think that anyone who receives special education training will, as a result, produce increased learning rates of students who need special education. What do I mean by "increased?" "Increased" as compared with what? Increased as compared with pupil learning rates when instructed by those who have not received that special education training; increased compared with rates of learning these pupils would show in a regular classroom situation with no special services; increased over no services or no instruction at all.

The research needs I see fall into three general areas.

The first has to do with the skills, attitudes, knowledge, activities, behaviors, performance, competencies--whatever we may wish to call them--of special education personnel that are functional variables in increasing (and maintaining) rates of pupil learning and achievement of desirable outcomes. So we want to know, and would like research to tell us, which competencies are functional in increasing and maintaining the rates of learning of our pupils who are eligible for special education.

As a part of this research question, we might talk about two general types of special education personnel: The first I call the direct deliverers of instruction--those who are directly responsible for teaching our pupils. Some of the competencies or performance areas that we might want to have some information on might fall into such categories as teaching/learning procedures, including the use of materials; might involve observation and measurement, working with parents, classroom management (How do we individualize instruction for eight pupils at the same time?). I rather suspect that I would guide researchers in looking at the competencies and how they relate to increased rates of pupils achieving desired outcomes, for I don't think we

are going to isolate 300 million distinct competencies and then pour them into our special education personnel as part of the training program. Our kids are so different; they require different strategies. I think we might ask our researchers to look at models or abstractions that would include a number of specific tactics within the model. The model would have ways for making decisions on when to select a given tactic, when to no longer employ it and to select a new tactic, and so forth. I think we need a model here, rather than asking researchers to find us a million competencies that we can sweep together in a pile and then pass out to teachers.

The second kind of special education personnel I call indirect personnel. They still have primary responsibility for delivering adequate education, but they're not the front-line teachers. These are the personnel who lead, facilitate, consult with, and maintain the direct-teaching personnel--administrators, consulting or resource teachers, and counselors. Now here, in addition to the primary dependent variable of increased learning rates, we have a secondary dependent variable--the behaviors or the competencies or the ways that direct-teaching personnel perform in relation to their responsibilities. So we have two dependent variables to look at here. Here we might pose to researchers such questions as: What are some of the inputs or instructions that our indirect personnel can give to help our direct personnel be more effective in increasing learning rates and maintaining those increases? What are some of the monitoring tactics that these indirect personnel can use? What kind of feedback should these people be giving to the direct personnel? And what kinds of dissemination activities should be carried out so that communities become aware of programs, the good things that programs are doing, and the needs for programs?

Knowing some of these competencies for either our direct or indirect personnel and knowing that they are functionally related to increased learning rates of pupils eligible for special education, we might then consider a second area of research needs: What are good and efficient ways of teaching people these competencies? What are some of the better strategies that we can employ to teach them? Here again, we

still have a primary dependent variable, in my opinion, of the increased rate of learning of pupils. But there are some secondary and tertiary dependent variables that we ask our researchers to look at at the same time.

I think the third and final area I would like to talk about does not deal with research, but more precisely deals with a developmental type of activity. I think we need developed evaluation systems that tell us how well we are doing our training, evaluation systems that we can employ during the training process itself and evaluation systems that we can apply after the training and our personnel are actually on the job. I think we need some models of evaluation and some instruments that can be shared with the field. I would like to see BEH fund some training programs to develop model evaluation systems for their particular programs and then to disseminate those. I think we would want a number of programs to have an opportunity to do this--programs that are dealing with various types of personnel. I think it might be worthwhile to ultimately carry these evaluations to comparative levels where we can compare efficiencies of training program A with the efficiencies of training program B and this way perhaps get a look at cost-benefit and cost-efficiency analyses.

Task 4:

Identification of Research Needs
Related to Personnel Utilization in
Education for the Handicapped

Analyzing Factors Affecting Research on Personnel Utilization

by

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I've been listening, as you have been, to a lot of people talk about social systems and about looking at personnel within the context of social systems. Many of you who may have taken some work in educational administration at some time or another may have heard about a theory called "administration as a social process." It was described by Getzels and Guba in 1957 in an article in the School Review*. They offered two dimensions, normative and individual, for looking at schools as social systems. The normative dimension includes institutional policy and procedures which identify role and function in the form of role expectations. Individuals occupy specific roles. The individual dimension acknowledges individual biological and psychological characteristics in the form of personality and need dispositions. These dimensions intersect to produce social behavior in the social system of the public schools.

One of the critical questions I've been asking myself all along is "Who is going to use this research data that's going to be collected on personnel?" And I submit that when you talk about personnel utilization, you're going to do that with people in the public schools for the most part and it's probably going to be done in state departments of education, maybe in universities, although I think the university is the last place it's going to be done. I'm convinced that the university burns people up like the wood in that fireplace over there. My sense is that universities are probably the most difficult institutions to change. So one assumption

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* Getzels, J. W. & Guba, E. G. Social behavior and the administrative process. School Review 1957 65 423-444.

I want to make to you is that no research on personnel utilization is going to take place until some mutually determined needs and some mutually determined benefits have been established between researchers and personnel within the public schools.

I'm going to deal today with the issue of personnel utilization in the context of schools as social systems and special education as a subsystem within them. I refer specifically to the topic of increasing utilization of personnel in service to children. In an article he wrote in 1966, Matthew Trippe stated that "The major task for educators today is to find increasingly more effective ways of introducing flexibility into our organized schools. This will not be done by wholesale movement to set up special services for handicapped youngsters...and now most of all, the critical issue is to look at the stance of the school in relationship to all children." How we're going to train or retrain personnel to work effectively with these concepts in the public schools demands, as far as I'm concerned, some kind of new posture with regard to the larger social system.

What Will Increase Utilization of Personnel?

What are the factors that facilitate increasing utilization of personnel, especially in special education? By "personnel" I mean therapists, psychologists, nurses, social workers--the whole gamut of diagnostic and therapeutic people. Perhaps some of the subjects I suggest will identify a little bit more what I'm talking about. Foremost among them is one of continued federal support for special projects and investigations of innovations in special education leading to new role utilizations. That is certainly a force that's going to cause us to look at new role models.

Another thing would be state law and rules and regulations. I was very much struck by the new Massachusetts law when I read it a couple of months ago. Reading that law, I had difficulty finding any words that said "mentally retarded" or

"physically handicapped" or "emotionally disturbed." I didn't see them in the rules and regulations either. I saw a law that talked about "the least restrictive environment," talked about "principles of normalization," talked about "deviations from the mainstream" in terms of "instructional alternatives." I was quite impressed and see it, certainly, as a way to think about new ways to use people.

Another subject relates to litigation. As you know, in California and Michigan, there is no more group testing of IQ. Psychologists in those states can no longer use IQ as the sole criterion for determining pupil placements.

The kind of research question I thought about concerns the self-perception of psychologists and other members of educational planning and placement committees and others' perceptions of their influence on making decisions and what roles people play in terms of follow-up. What about other team members' perceptions before participation in case conferences and afterwards in terms of looking at self-perception and other perceptions of influence in terms of making those kinds of decisions? There are some studies done in the late fifties by people at the University of Michigan's Institute for Social Research who looked at power and status issues and their influence on decision making in small groups. My colleagues and I would like to apply their findings to this concept.

Another issue that's pressing us is to look at increasing concern about personnel utilization on the part of citizens and parents. In a conversation I had with the Commissioner of Education in Massachusetts, he said that special education from his point of view had dramatically introduced parents to educational decision making. I think in many places professionals have become uncomfortable in the presence of parents at educational planning and placement committees. So we should look at a researchable question related to parents' roles in education planning, for example, or at parents' committees or the case-conference concept. We want to take a look at the effect of parent training on their degree of activity and cooperation and their

influence on the quality and type of decision that's being made during these kinds of deliberations. We also want to use it to get professionals to begin to realize that parents are part of the decision-making process. I think principals and parents are going to make decisions about educational placement, and everybody else will be consultants. We need to look at leadership and at decision making as it occurs in school systems. In centralized models, decisions are made downtown opposing decisions that are made in school buildings. If the type of decision that's made is not shared between that director and that building principal, if that man or woman in the building is ever to assume some responsibility for the role in the public schools, it seems to me some initial change in concept has to be run through the special education administrators, supervisors, and consultants. There have been some recent studies of building principals' preparation and sensitivity, and I think we've found that many principals fear much and know less about the handicapped. We've started this in the public schools as training to help people begin to assume more responsibility. But we must not do it without examining some of the assumptions, some of the issues involved, without examining the fact that if we really want to involve general education personnel in a joint kind of way, we have to begin to share some of the decision-making responsibility. Education planning committee meetings, placement, and case conferencing might be appropriate ways general education and special education staff could share their decision-making responsibility. You always have an appeal procedure. If parents are unhappy or one of your professionals is unhappy, you can run it right back through the central office and provide for the necessary advocacy to turn that decision around.

All of us have been talking about the alternative instructional model for looking at increasing personnel utilization. Another issue is that we're all pretty much dissatisfied with some of our models, with the fact that in certain systems the norms have been so rigid that we've only been allowed to play certain kinds of roles. We want to change that.

Sharing the Responsibility with Other Professionals

In Michigan we have a law that says at zero, kids can be identified for services. One case I know of concerned an infant of 16 hours. A mother had had her baby 16 hours before and her husband was there and a nurse was trying to help her understand what the doctor had told her about her baby. The nurse said "I know somebody up the street who might be able to help these parents deal with what's happened here" and within 16 hours there was a special ed director and a social worker from Beekman Center there who began to talk about educational intervention before the parents had even seen the child. The point is that we are going to have to begin to realize more and more that we're going to have to share responsibility with other professionals, especially with kids in the first year of life--probably with nurses, occupational therapists, physical therapists--and to begin to look at some of the role reciprocity that has to occur. I think one of the places we in education can look at very specifically, and ask some research questions about, is the regional diagnostic center. I don't know about your states, but they're all over ours, and I think that five people see an individual kid, all from different points of view. When you start separately, you arrive at the case conference committee and tend to be separate at that point too and then you negotiate. I think we need to examine that process. I think one reason we have to examine it is that, according to estimates made by my staff at Michigan, 85 percent of all cases seen by the interdisciplinary team go back into the public schools. And an educator has to interpret some gobbledy gook from all these other professionals. Somebody has to translate the information. I want to look at ways in which that information is broken down and can be translated and used in instruction not only for educators but also for those engaged in therapeutic activities with children.

What Will Hinder the Utilization of Personnel?

On the other side, there are some forces that have hindered efforts to increase the

utilization of personnel. Among them are these: A tenuous future for continued resources from the federal government, some rigid laws and administrative rules and regulations that still exist, a reaction to pressure to change role functions due to legal and administrative requirements (most of us do not like to be told to do something, and the fact that lawyers do it who, some of us believe, are making fat fees from it, bothers us even more), the lack of professional comfort and sharing some responsibilities with parents in decision making. I think there is a lack of know-how and commitment on the part of everybody from state boards to school boards to superintendents and others in systems because they still don't know what to do. We still have our magic language system which has served to separate us in some ways. When we're trying to talk about integration or interfacing with general education, we still maintain our separateness and we do that in lots of very subtle and sometimes not-so-subtle ways. I think we need to adjust the problem focus to ourselves as special educators as we look at our relationship to general education personnel.

Another thing is the resignation, the powerlessness of people within the public schools. I don't know how many of you have taken a look at Sarason's book entitled The Culture of School and the Process of Change. He makes a really heavy comment in there about the fact that professionals probably spend a lot of time talking to children and don't spend a lot of time talking to anybody else. And in most systems, most decisions are still coming from the top down. In many systems, people have never seen the light, do not have any belief that they can shape their own destiny, and therefore lock their doors. Teachers' unions are helping them not only lock the door but put up a sign that says to get away from it. I think it's significant to consider the whole collective bargaining issue and its impact on the relationship between what kinds of roles people can play vis a vis the integration of handicapped kids.

There's a director in one of the largest counties outside Detroit who said to me in his office "That resource room, Leonard, we were sold down the river."

"What are you talking about?" I asked.

"We eliminated all of our special classes," he said.

"That's nice," I told him. "What do you do with the kids who don't make it in the resource room?"

"They're in the resource room," he said. I saw him six months later and he said "We're bringing back the special classes. Forget the resource room."

I said "Do you mean to tell me you were so shortsighted, that you knew some kids needed instructional environments and couldn't tolerate that degree of integration and that's what you did? And you're complaining to me or others who've been trying to push something down your throat?"

I call that an unplanned response in the planning for educational alternatives. And I say one of the biggest problems in our state, and it might be in yours, is that we have so many programs on top of programs that don't have any relationship to one another that we're going to kill ourselves. We're going to get thrown out of those places. And it's happening in some of our systems.

The Need for Leadership Training

I guess I really feel pretty strongly about that. The primary reason is because I'm interested in leadership training and that we have probably more incompetent, more frustrated and disillusioned administrators who need help. I think many of our states (Massachusetts is an excellent example) have a need for technical assistance. There's a need for some outside groups of people who are organized--we're talking about university personnel now and some others--to assist and work with school people in solving some real problems. And I'm really very much convinced that we must start to think about some interdependency and cooperation between universities and public schools. Many of you are doing it, I know that, but I don't think that all of us are convinced it's a legitimized activity. You've got a project, you've got $100,000; half your salary's paid for, so you do it. Otherwise, it is not legitimate.

I hope this exercise of looking at both facilitating and hindering factors related to a particular goal might be a process for consideration as you begin to identify some issues for yourself. This exercise is called Force Field Analysis. A summary of this process is shown in Table 1. I have also provided a list of research questions in Table 2 that tie into the goal of personnel utilization in service to the handicapped and to those perceived forces listed in Table 1.

Table 1

Force Field Analysis Process

GOAL STATEMENT: INCREASING PERSONNEL UTILIZATION IN SERVICE TO THE HANDICAPPED

FORCES FOR:	FORCES AGAINST:
Federal support of new manpower role and retraining personnel	Rumored and actual reductions of federal support
State laws	Highly specific laws
Administrative rules and regulations	Categorical rules and regulations with rigid funding provisions
Community and citizen advocacy	Organizational climates which foster a resistance to change
Due process guidelines	Rigid role expectations set by policy makers and enforced by school executives
Litigation	Rigid disciplinary parameters and territorial disputes over standards and prerogatives
Individual and personal and professional dissatisfaction with role stereotypes	Conflict in values and adaptive styles of role incumbents
Adaptation mechanisms of role incumbents	Lack of criteria in resource allocation
Parent organizations	Limited resources to support professional development
Professional organizations	Lack of integration between service alternatives
Research and demonstration projects	Centralized versus decentralized decision making procedures related to personnel and program responsibilities

Table 2

Related Research Questions

FORCES FOR:	FORCES AGAINST:
1. Determination of effect of litigation on status and role of school psychologists in the assessment, planning, placement and programming for children with exceptional needs	1. Self-perception vs. others' perception of the influence of individual team members on educational planning and placement decisions
2. Review of formal and informal parent organization strategies to effect a change in policy, program and resource allocation to programs for children with special needs	2. Effect on parent training on their participation in case conferences and others
3. Review of special educational alternative service delivery models and the process of implementation in school buildings and systems.	3. Studies of desensitizing professional practitioners involving parents in educational planning and placement, case conferences
4. Increasing regular teacher's teaching time with exceptional children in regular classrooms through team-teaching in alternative service delivery models	4. Centralized vs. decentralized decision making structure within local school districts and its effect on personnel assignment and role functions within individual school buildings
5. Description of data generation (including assumptions and assessment objectives) from an interdisciplinary team and then synthesized and integrated for implementation into instructional and therapeutic programs for children, youth, and adults	5. Effect of collective bargaining agreements on the assignment and role expectations for special education support personnel
6. Examination of role reciprocity between professionals involved in assessing children in schools, regional diagnostic centers, and university-related clinics and training centers	6. Effect of introducing alternative service delivery models independently versus redefining a continuum of services in individual school buildings
7. Expansion of cadre and peer consultation and learning models to increase alternative service delivery implementation in schools	7. Establishing criteria through regular classroom teacher's perception of their performance by successful inservice and consultation to them and children
8. Use of organizational development specialists outside and within the schools to increase the acceptance of building staff to maintain children with special needs in regular classrooms	8. Study of leadership styles of special-education administrative personnel and their effect on increasing principal's acceptance and involvement in educational planning and placement for children in special education
	9. Determination of program parameters for the administration and supervision of special education in local school buildings

RECOMMENDATIONS

RECOMMENDATIONS

During the conference, each team developed lists of research needs in each of four topic areas: pupil outcomes, and the training, selection, and utilization of personnel. All participants shared these lists and from this total pool of ideas, each team first identified the most critical needs for research in each area and finally the top-priority need in the field of development of personnel to serve the handicapped. The top-priority needs were reported at the final session of the conference.

Throughout the conference, the members of each team focused their attention on pupil outcomes as the most critical issue in special education. Outcomes--or achievements--serve as indicators of how effectively all other parts of the system are functioning. They are the criteria against which to answer such questions as: Is the selection process admitting the best candidates to training programs--and into employment? Are training programs preparing personnel to bring about maximum pupil gain? What are the most effective combinations of personnel resources, delivery systems, and learning environments? And, of course, are the educational goals and objectives for given handicapped children both desirable and realistic?

It should be kept in mind that although personnel as used here refers most frequently to professional teachers, almost all the needs discussed at the conference apply as well to others who contribute to education of the handicapped.

The research needs that participants considered top priority are discussed beginning on page 52. A discussion of additional needs that were considered critical begins on page 56. For each need listed, there is a statement of the need for research followed, in some instances, by questions to be addressed by the research or specific strategies recommended by the participants. The statements within the top-priority and additional research needs are not given in order of priority.

I. Top-Priority Research Needs

It should be noted that although no one of the final top-priority items was identified with the second topic area, personnel selection, all groups did nevertheless recognize as important the ways in which personnel are selected for training and job placement.

Pupil Outcomes

For special education programs to be appropriate and effective, they must address the needs and potential of the individual handicapped person for whom they are planned. They must reflect, as well, the values of the particular subculture in which the individual lives. Further, the program objectives must be a product of community participation in the setting of educational objectives. Since all segments of the community will not agree, means must be found to resolve differences in attitudes, values, and expectations to permit the individual student maximum achievement of his own educational goals.

This indicates three major research needs and poses several researchable questions:

1. Develop and demonstrate procedures for determining educational expectations and appropriate educational objectives for individual handicapped persons.

   What educational outcomes are important to relevant consumers (handicapped students, their parents, and employers) and to relevant policy makers (legislators, teachers, and teacher trainers)?

   Are goal values the same regardless of cultures or are certain values specific to various subcultures?

   Do educational values vary as a function of the environment (rural, suburban, urban) and the occupational needs of that environment?

How can the community be involved in establishing educational objectives? What strategies are helpful in mediating differences in attitudes, values, and expectations?

How can the present levels of performance and expectations for future performance for individual students with specific handicaps be defined?

What is the probability that various handicapped individuals will attain desired outcomes?

By what processes and criteria is success determined? Does the handicapped child express ideas of success differently from one who is not handicapped? Do criteria of success differ for males and females with the same handicap?

What are the minimum essential levels of competence--and/or profiles of several levels of outcomes--that individual handicapped people must achieve to have a reasonable chance for a happy, healthy, successful life?

2. Define curriculum areas for education of the handicapped in terms of short- and long-term pupil outcomes. Areas should include but not be limited to:

creativity	human relations
survival skills	aesthetic orientation
self-understanding	recreation/leisure
learning how to learn	citizenship

3. Develop measures of educational achievement that can be used for continuous assessment of pupil progress and that are sensitive to small increments of growth.

How can these measures be used as criteria for evaluating personnel development programs? The effectiveness of personnel in the classroom? Personnel selection?

How can achievement of handicapped individuals be evaluated within the context of their own framework of values and expectations and that of family, special educators, and other advocate groups?

The research methodology must include procedures for continuous measurement of pupil progress toward the established objectives and feedback to permit analysis and evaluation.

Personnel Training

Since all training efforts should relate to pupil outcomes, it is necessary to determine the competencies required of special education personnel to produce those desired outcomes. Then the instructional programs must be designed to build in these particular competencies. These programs must, in addition, accommodate differences in trainee characteristics and differential competencies required of personnel in various kinds of delivery systems.

The three top-priority research needs in this area center on interaction between the teacher and the handicapped pupil, characteristics of the training program, and evaluation of the training process:

1. Develop systems for observing teacher behaviors and teacher-pupil interaction. Conduct empirical studies of how specific observed teacher behaviors relate to specific pupil outcomes.

   What basic competencies do teachers need?

   What teacher competencies effect desired outcomes in pupils with different handicaps?

   Are different teacher competencies needed for alternative models of special education (such as mainstreaming, self-contained vs. itinerant programs)? For different content areas?

2. Determine how specified aspects of the training processes contribute to the development of competent personnel. Develop models for evaluating training programs that include trainer, trainee, and pupil-outcome variables and that facilitate application of the evaluation findings for the improvement of personnel training programs.

   What basic competencies do personnel need?

   What influences do the nature and personal characteristics of trainers have on training outcomes?

Are modular and/or auto-instructional programs as effective or more effective than traditional programs? Do some trainees do better in one type of program or the other?

Are there differences between programs that are predominantly field-based and those that are not? Between those that are predominantly categorical and those that are not?

Are simulated experiences as valid as reality-based practicums? Does the amount, variety, or quality of practicum experiences make a difference?

3. Study alternative systems for in-service training.

Is it feasible to provide training through such avenues as closed-circuit TV or self-instruction modules?

What other modes are feasible?

Personnel Utilization

Having considered issues that relate to pupil outcomes, the selection of personnel, and the training of personnel to teach in ways that result in maximum pupil gains, the participants next discussed the effective utilization of personnel. This discussion pointed up two top-priority needs for research:

1. Determine the relationship of pupil outcomes to organizational atmosphere and alternative configurations of manpower utilization.

What effect do the degree of openness in a school system and different staffing patterns have on student achievement?

Do they affect teacher productivity?

What are the relative cost benefits?

2. Develop and implement various teacher role models (such as the teacher as a program manager) and compare the efficacy of alternative models.

How can teachers assess what the individual pupil can presently do, predict his learning potential during the next stages of development, determine realistic educational objectives, and design an appropriate educational program?

How can teachers identify, mobilize, and secure the support for the program that is available from auxiliary systems such as:

- Personnel resources within the school system such as physical education teachers, home economics teachers, administrators, physical therapists, occupational therapists, and vocational-technical teachers
- Community resources such as parents, the clergy, social agencies, and medical personnel
- Local, state, and federal governments

II. Additional Research Needs

Additional needs that were identified by the participants as critical but not top-priority are given below along with key factors that the participants felt should be included in the research efforts. Although these are presented by category for convenience, most are multi-dimensional and relate to more than one focus area.

Relationships between Teaching and Pupil Outcomes

Determine if there is a relationship between pupil achievement and the degree to which personnel have knowledge of, and identify with, the population they serve. Test the theory that the match of personnel characteristics to pupil characteristics (for example, by type of handicap, ethnic group, socioeconomic status, or sex) is a valid criterion for selection for training programs and for employment. Effectiveness of the match should be studied at entry into, during, and exit from the training program and at entry into and during actual service.

Determine what positive and negative effects programs of interdisciplinary instruction involving multiple personnel have on pupils as compared with nonteam efforts. Study teams with various compositions of personnel and team planning and interaction and their relationship with students of various needs.

Identify, on the basis of observation of teacher-pupil interaction, specific teaching strategies and competencies that are needed to effect desired specific outcomes. Determine empirically whether observed strategies produce or are meaningfully related to outcomes on both short-term and long-term bases. This will involve (a) the development and adaptation of observation systems on generic teaching behaviors and on specific content-based strategies, (b) ecological studies of classroom interactions, and (c) comparative studies of teacher behaviors and effectiveness in different content areas.

Selection of Personnel for Admission to Training Programs and Job Placement

Investigate ways to better use practicum and student-teaching experiences to facilitate the selection--and self-selection--of those trainees who will be effective in the field of special education.

Analyze models of selection which match trainees to particular training models, performance models, and operational education programs in which they will function most effectively.

Identify relevant characteristics of personnel who are successful in various roles. Determine how these relate to characteristics at entry into training and into the field, how they relate to success in transferring from one role to another, and if they are predictive of success on the job.

Identify the factors that make up and influence the decision-making process in selecting personnel and determine how effective they are. Include such factors as criterion-referenced measures of competence, objective vs. subjective judgments (personality), requirements of affirmative action programs, legal considerations, and fiscal constraints.

Establish priorities for the allocation of resources to preservice vs. in-service training programs. Judgments should be made on the basis of studies of attrition from the field, the likelihood that teachers will return for further training, and the relative cost benefits.

Develop models for the selection of personnel for training programs that relate the policies on admissions (open vs. selective) to critical points during the training, achievement at exit from the training program, and cost effectiveness.

Personnel Training and Retraining

Study the training and retraining processes to determine which aspects relate to effective personnel development. Include as a measure of effectiveness the development, reinforcement, and maintenance of behaviors appropriate for working with the handicapped.

> Are programs more effective when there is a match of characteristics and learning styles?
>
> Determine which competencies are needed by personnel working in various alternative special-education delivery models such as: resource rooms, community-based programs, mainstreaming models, consulting teacher models, self-contained classrooms, and itinerant models.

Develop models for community-based programs to train para-educational personnel to work effectively with special educators and parents on planning educational outcomes for the handicapped.

Develop and validate specific training programs on classroom management including strategies for effective classroom control, effective motivational methods, and teacher self-evaluation of management success. (Programs should be for both preservice and in-service training.) Include in the instructional methodology the use of case studies of pupil behavior in varied management settings with varied degrees of structure.

Devise personnel-development programs for such curriculum areas as: creativity, survival skills, self-understanding, learning how to learn, human relations, aesthetic orientation, recreation/leisure, and citizenship. Develop measurement technology in these same areas.

Develop model programs to train teachers in planning educational outcomes for the handicapped. Include in the program:

- Procedures for initial diagnostic and assessment procedures
- Measurement techniques for continuous monitoring of educational outcomes
- Training in how to observe behaviors
- Strategies for negotiating with students on appropriate outcome objectives that take into account the students' life styles and cultural differences

Personnel Utilization

Study alternative configurations of manpower utilization as they relate to:

- Cost effectiveness
- Social, economic, and political influences
- The role of the teacher as a program manager
- Effectiveness as judged by pupil outcomes and difference by types of handicapping conditions
- Effectiveness in mainstreaming models along the continuum from residential institution to regular classroom

Determine how regular classroom teachers perceive the effectiveness of consultant and resource teacher services. Determine ways to develop effective, cooperative relationships among regular teachers, special teachers, resource teachers, and other ancillary personnel.

Study the roles of the parent and other nonprofessionals in the special education process including factors involved in developing and maintaining the involvement

of these personnel, differential roles they may fill in planning, in placement, and in programming; and their relationships to special education professional personnel.

Study the implications of mandates for the equalization of educational opportunity as they relate to the population to be served, types of intervention programs, and manpower needs.

Relationship between Personnel Utilization and Service Delivery Systems

Identify the teaching skills, information, and attitudes that are needed by personnel working in alternative delivery systems:

Which are generic and which are specific to type of handicapped to be served?

What special needs do regular teachers have in order to implement mainstreaming programs?

What support system is necessary to accomplish mainstreaming?

Determine the effectiveness of varied patterns of personnel utilization (teachers, family, aides, resource personnel, and so on) in varied service delivery systems.

Investigate the concept of intervention by developmentalists who provide early diagnosis of developmental problems, build individualized programs for children with such problems, and who work with the parents to develop techniques to help both the child and the family.

Learning Environment

Analyze the learning environment and its effect on pupil learning and adjustment. Studies should include consideration of special education service alternatives, conditions, facilities, administration, and personnel roles. They should

consider functions at the system, the program, and the individual classroom levels. And they must look at the affective factors such as the development of self concept and interpersonal relationships.

Does the integration of innovative special education programs affect the total school program? Does it change how the community perceives special education pupils? How does it affect costs? How does it affect pupil self concepts?

Identify change agents and barriers to institutional and individual change:

> How can we influence public school administrators and the social structure to incorporate into the educational system atypical programs and personnel trained to new roles?

Job Market for Special Educators

Develop a management information system for continuous prediction of personnel needs in institutions, state and local departments, and so on.

Determine ways to select from the talent pool of existing teachers candidates for training--or retraining--to teach handicapped children. Develop criteria of success which are specific to the setting in which the teacher will be employed, focusing on teaching style as well as on pupil gain.

Determine how personnel competencies relate to job specifications and to employee selection processes.

Information Dissemination

Determine how information and training materials can best be disseminated and made readily available for use by practitioners.

Study the effectiveness of multimedia techniques for disseminating information on exemplary programs and explore the feasibility of disseminating materials through a BEH loan/rental program.

Additional Concerns Related to Measurement

Describe the sequential development of handicapped pupils and develop models for measuring skill sequences.

Develop multiple measures of pupil outcomes as opposed to global and traditional achievement tests of specific skills.

Develop innovative approaches to defining criteria for assessing pupil progress in the classroom as related to specified pupil outcomes and to developing techniques for measuring personnel competencies as they relate to increased rates of pupil growth. Studies should take into account both direct and indirect service delivery systems and cost benefits.

Develop models for evaluating pupil outcomes that provide for feedback to teachers as an aid to improving their teaching performance.

Develop technologies for pupil assessment that include naturalistic observation, criterion-referenced testing, and situational performance appraisal. Develop programs to train teachers how to use such techniques and how to develop their own.

Develop performance criteria and instrumentation for the assessment and career guidance of trainees that include measures of attitude and evaluation by pupils.

Develop models to evaluate the effectiveness of personnel development relative to trainer and trainee performance and pupil outcomes. Methodologies should include a procedure for using evaluation data to improve the programs.

Summary

The first topic addressed by the participants, and one that continued to be the focal area of concern throughout the conference, was pupil outcomes. The

participants recommended the development of valid assessment procedures for defining present levels of performance for individual handicapped pupils and suggested that research be conducted to define the expectations for educational outcomes held by educators, community groups, by the handicapped student himself, his parents, potential employees, legislators, and others. They noted that strategies need to be developed for involving these people in setting objectives for special education that are relevant to the community's own value system and for mediating differences among expectations and achievement. The methodologies should allow for individual community differences and for the continuous reassessment of pupil status and redetermination of educational goals.

The participants noted that in order to set meaningful goals, more must be known about what competencies the handicapped need in their personal life, in school, and at work. Research is needed to determine what these competencies are and how they are required. For the latter, the participants recommended two major areas for research--one dealing with teaching strategies, the other related to personnel. They recommended observation studies of teacher-pupil interaction to identify which actions--or strategies--lead to desired pupil outcomes, followed by tryouts of these strategies under controlled conditions to verify the relationship between teaching techniques and the pupil behaviors that result. These research efforts will, of necessity, be multidimensional, taking into account the various combinations of different learning environments, organizational structures, service delivery systems, staffing patterns, and types of handicapped served.

Research can build on the findings of these studies to address the critical areas of selecting personnel for training and for employment and of building training programs (both preservice and in-service) to prepare these personnel

to work effectively with the handicapped in given educational settings and to work effectively with each other. Research should be directed toward defining the roles and functions of the various professionals, paraprofessionals, parents, and others who are involved. The criteria of success for these program efforts must always center on how well they contribute to the development of desired pupil outcomes.

Throughout the conference discussions, there were recommendations concerning the development of better measurement tools and strategies. Participants stressed the need not only for valid measures of pupil status but for continuous assessment to identify small increments of growth as they relate to discrete curriculum units. The measures need to be specific-related rather than global. Means need to be devised to relate pupil achievement to particular aspects of the educational process and environment. Research might explore performance-based measures of teacher competency.

The participants viewed as especially critical the need to conduct longitudinal studies in major research on predictors of success--for personnel as well as individual handicapped students.

Additional recommendations included: the development of an information-dissemination system, determination of the educational program and environment on students' affective development, and studies of the cost benefits of various configurations of program, administrative structure, and staffing patterns.

The model developed by the Steering Committee (see Figure 1, page 5) was designed to serve as a framework for the topics under discussion at the conference. Although it was not discussed at length during the conference, the model does relate very closely to the recommendations that resulted.

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